What is claimed is:

1. An optical system comprising:

a plurality of lenses including an aspheric lens having a first aspheric surface; and

a light absorption portion arranged on an optical axis and having thickness distribution in a direction perpendicular to the optical axis, wherein

the light absorption portion includes a second aspheric surface, and

the following conditional expressions are satisfied:

$$|nG \times XG/(nF \times XF)| > 1.00; \text{ and}$$

$$0.800 \le hG/hF \le 1.30,$$

where nG is a refractive index of the aspheric lens at a wavelength of 550 nm, nF is a refractive index of the light absorption portion at the wavelength of 550 nm, XG is an aspheric sag amount of the first aspheric surface, XF is an aspheric sag amount of the second aspheric surface, hG is a height of a position on the first aspheric surface through which a marginal ray of an axial ray passes, and hF is a height of a position on the second aspheric surface through which the marginal ray of the axial ray passes.

2. The optical system according to claim 1, wherein the following conditional expression is satisfied:

$$0.0500 \le k_{550} \le 0.950,$$

where $k_{550}$ is an extinction coefficient of the light absorption portion at the wavelength of 550 nm.

3. The optical system according to claim 1, wherein the following conditional expression is satisfied:

$$1.00 \le nF \times XF/\lambda_{550},$$

where $\lambda_{550}$ is the wavelength of the light at the wavelength of 550 nm.

4. The optical system according to claim 1, wherein the following conditional expression is satisfied:

$$0 \le d/L < 0.250,$$

where L is a distance on the optical axis from an optical surface closest to an object side to an optical surface closest to an image side in the optical system, and d is a distance on the optical axis between the aspheric lens and the light absorption portion.

5. The optical system according to claim 1, wherein the following conditional expression is satisfied:

$$0.700 \le mG/mF \le 1.40,$$

where mG is a height of a position at a largest distance from the optical axis within a region in a meridional cross-section of the optical system where an off-axial ray to be condensed at a maximum image height passes through the first aspheric surface, and mF is a height of a position at a largest distance from the optical axis within a region in the meridional cross-section of the optical system where the off-axial ray to be condensed at the maximum image height passes through the second aspheric surface.

6. The optical system according to claim 1, wherein the following conditional expression is satisfied:

$$0 \le dXF(rF/4)/dXF(rF/2) \le 0.800,$$

where r is a height from the optical axis, dXF(r) is an amount of change in thickness of the light absorption portion with respect to r, and rF is an effective diameter of the light absorption portion.

7. The optical system according to claim 1, wherein the following conditional expression is satisfied:

$$0 \le |dXF(rF/2)/dXG(rG/2)| \le 0.800,$$

where r is a height from the optical axis, dXG(r) is an amount of change in aspheric sag amount of the first aspheric surface with respect to r, dXF(r) is an amount of change in thickness of the light absorption portion with respect to r, rG is an effective diameter of the aspheric lens, and rF is an effective diameter of the light absorption portion.

8. The optical system according to claim 1, wherein the following conditional expression is satisfied:

$$T(rF/4)/T(0) \ge 0.400,$$

where T(r) is the transmissivity of the light absorption portion at a position where a height from the optical axis is r, and rF is an effective diameter of the light absorption portion.

9. An image pickup apparatus comprising:

an optical system; and

an image pickup element configured to receive an image formed by the optical system,

wherein the optical system comprises:

a plurality of lenses including an aspheric lens having a first aspheric surface, and

a light absorption portion arranged on an optical axis and having thickness distribution in a direction perpendicular to the optical axis,

wherein the light absorption portion includes a second aspheric surface, and

wherein the following conditional expressions are satisfied:

$$|nG \times XG/(nF \times XF)| > 1.00; \text{ and}$$

$$0.800 \le hG/hF \le 1.30,$$

where nG is a refractive index of the aspheric lens at a wavelength of 550 nm, nF is a refractive index of the light absorption portion at the wavelength of 550 nm, XG is an aspheric sag amount of the first aspheric surface, XF is an aspheric sag amount of the second aspheric surface, hG is a height of a position on the first aspheric surface through which a marginal ray of an axial ray passes, and hF is a height of a position on the second aspheric surface through which the marginal ray of the axial ray passes.

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